

PROFITABILITY DETERMINANT OF CONVENTIONAL COMMERCIAL BANKS USING CREDIT RISK AS A MODERATING VARIABLE

WIDYA PUSPA ANDIKA, ISTI FADAH & NOVI PUSPITASARI

University of Jember, Indonesia

ABSTRACT

This research aimed to analyze the influence of CAR, LDR and BOPO partially on profitability (NIM) and to analyze NPL as a moderating variable in relation between CAR with NIM, LDR with NIM, and BOPO with NIM. The population of this research is the Conventional Commercial Bank in Indonesia. The sampling method used is saturation sampling, taken from Conventional Commercial Bank listed on OJK. This research was conducted during the period of 2012-2015 and selected as many as 96 Conventional Commercial Banks that became a sample research. The research data analysis methodology used is, multiple linear regression analysis and moderated regression analysis (MRA) with residual test. The results of multiple linear regression analysis showed that partially, CAR, LDR and BOPO significantly influenced the profitability (NIM) and they had negative relations with the net interest margin (NIM). The results of the moderated regression analysis (MRA) with residual test showed that NPL is able to moderate influence of CAR, LDR, and BOPO on the profitability (NIM).

KEYWORDS: Profitability, Credit Risk, NIM, CAR, LDR, BOPO & NPL

Received: Jan 04, 2018; **Accepted:** Jan 24, 2018; **Published:** Mar 03, 2018; **Paper Id.:** IJECRAPR20182

INTRODUCTION

Profitability gave the information on how efficient a bank in carrying out its business activities. According to the regulations of Bank Indonesia number: 6/10/pbi/2004 ratio of profitability or commonly called earning ratios consist of Return on Assets (ROA), Return on Equity (ROE), the Net Interest Margin (NIM), and operational costs to operating income (BOPO). The development of profitability ratio of Commercial Bank especially Conventional Commercial Bank that is measured by NIM showed that there is a rise in 2015 compared to the previous three-year decline respectively. According to Banking Statistics Indonesia data in 2012, the ratio of Conventional commercial banks NIM experienced a decline over the previous year, from 5.67% to 5.49%, then 2013 dropped to 4.89%, and then 2014 to 4.23%. The ratio of NIM experienced an increase in 2015 to 5.39%. It is interesting to do research on the factors that affect the profitability of Conventional Commercial Banks that is measured by NIM.

This study tested the influence of internal factors such as Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and operating expenses to operating income (BOPO) on the profitability that is measured by Net Interest Margin (NIM). Research on the influence of CAR, LDR and BOPO to NIM has been done by previous researchers. The Research of Cindy et al. (2016) stated that CAR positively and significantly affected the profitability (NIM), whereas Raharjo (2014) stated that the CAR does not significantly negatively impact NIM. The research of Hidayat et al. (2012) and Raharjo (2014) stated that the LDR have significant positive effects to NIM. Satriawan (2015) stated that LDR have a negative impact on profitability (NIM). Dumeric and Ridzac (2012)

shows the cost to income ratio that measures the efficiency of the bank (BOPO) have negative correlation with NIM. Different research results by Raharjo (2014) stating that the positive effect BOPO significantly to NIM.

Some of the results of such research showed that there is an inconsistent state giving rise to the alleged existence of a variable that moderate the relationship between variables CAR with NIM, LDR with NIM, and BOPO with NIM. The variable that suspected moderating is a Non Performing Loan (NPL) it's related to credit risk. The high NPL can affect the ratio of capital, which is reflected through the CAR, because the bank must bear the risk of channelling credit/earning assets, a high NPL has also had an impact on the distribution of credit which is reflected through the LDR, and resulted in the banks bear the costs. This research uses the NPL as the moderator variable due to the influence of the NPL to CAR, LDR and BOPO allegedly will have an impact on its effect on profitability (NIM). Some researchers doing research on the NPL as moderating variables in the relationship between CAR, LDR, and BOPO with profitability, but most researchers use ROA as the proxy of profitability. Researchers who examined the NPL as a moderating variable and using NIM as a proxy of profitability is Utami and Putra (2016), that results showed that the NPL affect negatively to relationship LDR with NIM.

Based on the matters outlined above as well as the results of previous studies of mutual contradictions, the author is interested in doing further research on factors that affect the profitability of banks with NPL ratio as moderating variable. The outline of the research problems are: (1) Are the CAR, LDR, and BOPO partially influential significant to NIM on Conventional Commercial Banks in Indonesia? (2) Does the NPL moderate the influence of CAR against NIM on Conventional Commercial Banks in Indonesia? (3) Does the NPL moderate the influence of LDR against NIM on Conventional Commercial Banks in Indonesia? (4) Does the NPL moderate the influence of BOPO against NIM on Conventional Commercial Banks in Indonesia?

This research aimed to: (1) Analyze the influence of CAR, LDR and BOPO partially against NIM on Conventional Commercial Banks in Indonesia, (2) Analyze the NPL as a moderating variable on the influence of CAR against NIM on Conventional Commercial Banks in Indonesia, (3) Analyze the NPL as a moderating variable on the influence of LDR against NIM on Conventional Commercial Banks in Indonesia, (4) Analyze the NPL as a moderating variable on the influence of BOPO against NIM on Conventional Commercial Banks in Indonesia.

As for the hypothesis presented in this study are as follows:

H₁: CAR, LDR, and BOPO partially influential significant to NIM

H₂: NPL significantly moderate the influence of CAR against NIM

H₃: NPL significantly moderate the influence of LDR against NIM

H₄: NPL significantly moderate the influence of BOPO against NIM

RESEARCH METHODS

This research is a quantitative approach, aimed to test a theory or hypothesis in order to strengthen or decline theory or hypothesis of the research that's already there. Presentation of data used the pooling data, it is a combination of cross section and time series data. This study used secondary data in the form of financial statement's publication. Conventional Commercial Bank in the period 2012-2015 which is accessible via the official website of the Otoritas Jasa Keuangan (OJK). The population in this research is the Conventional Commercial Banks are there in Indonesia. The

technique of determination of sampling is a saturated sampling or census. Samples were entirely taken from Conventional commercial banks registered in OJK, while the relation between variables of this research are shown by the following framework:

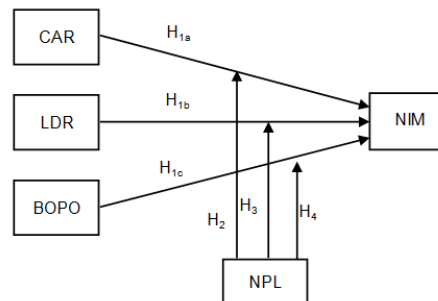


Figure 1: The Framework of Thie Research

Multiple Linear regression analysis in this research is used to find out how big the influence of variable CAR, LDR, and BOPO to profitability that is measured by NIM. This analysis technique is used, because researcher wants to analyze the relationship between the independent variable toward the dependent variable first before doing the regression analysis with moderating variable. The regression model used in this study is:

$$NIM = a + b_1CAR + b_2LDR + b_3BOPO + e$$

Moderated regression analysis with the residual test is used to testing the NPL as a moderating variable on the influence of each independent variable (CAR, LDR, and BOPO) to the dependent variable (NIM). Residual analysis wants to test the influence of deviation (deviation) of a model. The focus is the incompatibility (lack of fit) deviation resulting from the linear relationship between the independent variables. Lack of fit is shown by the value of the residual in the regression (Ghozali, 2007:171). The regression model with the residual approach used in this study is as follows:

a. Regression Model CAR to NIM with the moderating variable NPL:

- $NPL = a_0 + a_1CAR + e$
- $|e| = b_0 + b_1NIM$

b. Regression Model LDR to NIM with the moderating variable NPL:

- $NPL = c_0 + c_1LDR + e$
- $|e| = d_0 + d_1NIM$

c. Regression Model BOPO to NIM with the moderating variable NPL:

- $NPL = e_0 + e_1BOPO + e$
- $|e| = f_0 + f_1NIM$

THE RESULTS OF DATA ANALYSIS

The results of the regression analysis that tested the CAR, LDR, and BOPO to profitability (NIM) are as follows:

Table 1: Multiple Linear Regression Analysis Results

Variables	Coefficient	T	Sig.
Constant	11.929	19.370	0.000
CAR	-0.019	-2.901	0.004
LDR	-0.008	-3.844	0.000
BOPO	-0.062	-9.722	0.000
R Square = 0.230	Adjusted R Square = 0.224		
F = 37.836	Sig. = 0.000		

Source: SPSS Output 21 (data processed)

Based on table 1, regression equation (relating the the independent variable CAR, LDR, and BOPO to dependent variables NIM) is as follows:

$$\text{NIM} = 11.929 - 0.019 \text{ CAR} - 0.008 \text{ LDR} - 0.062 \text{ BOPO}$$

That equation can be explained that the constants of 11.929 refers to a level of profitability (NIM) when the independent variable i.e. CAR, LDR, and BOPO is zero. The regression coefficient -0.019 stated that any increase in CAR of 1 percent will lower the level of 0.019 NIM percent assuming the other variables to be constant. The regression coefficient of -0.008 stated that any increase in LDR of 1 percent will lower the level of NIM of 0.008 percent assuming the other variables considered to be constant. As well as regression Coefficients of -0.062 stated that any increase in the amount of 1 percent of BOPO will lower the level of profitability of 0.062 percent assuming the other variables considered to be constant.

The results of the regression analysis with the residual test that tests the NPL as moderating variables against the influence of CAR, LDR, and BOPO to NIM is as follows:

Table 2: Residual Test Results the NPL as Moderating Variables

NPL as Moderating Variables to	Information	Coefficient	T	Sig.
CAR with NIM	(Constant)	1.890	9.493	0.000
	NIM	-0.094	-2.779	0.006
LDR with NIM	(Constant)	2.010	9.974	0.000
	NIM	-0.108	-3.166	0.002
BOPO with NIM	(Constant)	1.825	10.070	0.000
	NIM	-0.087	-2.817	0.005

Source: SPSS Output 21 (data processed)

Based on table 2, regression equation obtained the NPL as moderating variables CAR with NIM is $|e| = 1.890 - 0.094 \text{ NIM}$. The regression equation of the NPL as moderating variables LDR with NIM is $|e| = 2.010 - 0.108 \text{ NIM}$. The regression equation of the NPL as moderating variables BOPO with NIM is $|e| = 1.825 - 0.087 \text{ NIM}$. The value of the coefficient of regression testing parameters variable the NPL as variables that moderate the relationship CAR, LDR and BOPO with NIM is negative and significant. It showed that the NPL is a moderating variable to the relationship between CAR with NIM, LDR with NIM, and BOPO with NIM.

DISCUSSIONS

The Influence of Capital Adequacy Ratio (CAR) to Net Interest Margin (NIM)

The test results against variable CAR showed that the CAR was negative and having significant effect against NIM with a p value 0.004 smaller than α (0.05). This happens, because the chances of the bank being able to raise the ratio of CAR or own capital, but not passed on in the form of credit optimally, so interest income obtained small banks and led to a low ratio of NIM. Increased CAR not capable of boosting the ratio of NIM. This can be caused because the bank is difficult in the optimum marketing strategy to channel credit, risk while funneling funds in the form of a credit, and competition between banks. In addition, with the amount of capital of the banks tend to invest their funds with care and choose to do other investments that have a smaller risk than funneling those funds in the form of credit, so that the CAR the rise could not afford to boost the ratio of NIM. Other investments which are done for example, the bank invested in capital markets by buying stocks or bonds

The results of this research are not in accordance with the concept that states that the higher the CAR, then stronger the ability of the bank to bear the risk of any credit/earning assets are at risk and be able to finance the operations of the bank, so that it will be a considerable contribution to profitability (Kuncoro and Suhardjono (2002:573). The results of this research also do not correspond to the results of research Cindy et al. (2016) and Leykun (2016) stating that a CAR influence positive and significantly to NIM.

The Influence of the Loan to Deposit Ratio (LDR) to Net Interest Margin (NIM)

Test results about the influence of LDR against NIM pointed out that negative and significant, influential LDR against NIM with p value 0.000 is smaller than α (0.05). Interpretation of the results of this study is the higher level of the distribution of credit, then the NIM will be increasingly low. This can occur due to the high level of channeling credit by banks. Of course, this will affect the interest income received by the bank, thus lowering the value of the NIM. The bank should be careful with an increase in the number of loans disbursed, given an increased amount of credit disbursed is a great achievement for the bank when it has been processed in accordance with the terms and conditions. It is very important to avoid an increase in bad debts due to the increased amount of the credit.

The results of this research are not in accordance with the research Hidayat et al. (2012) and Raharjo (2014) stating that the LDR positive effect significantly to NIM. According to Raharjo (2014) increase in LDR increase loans larger than the increase in deposits that were successfully compiled by the bank. This indicates that the increase in the bank's interest income is larger when compared with the increase in interest expense should paid by the banks, it will be raising the net interest margin of the bank (NIM).

The Influence of Operating Expenses to Operating Income (BOPO) to Net Interest Margin (NIM)

The test results against variable BOPO indicates that a negative and significant effect BOPO against NIM with p value 0.000 smaller than α (0.05). Interpretation of these results is the greater of the ratio BOPO, the smaller level ratio NIM or it can be said the bank's financial performance will decrease. This is due to the large value of BOPO shows that there is an increase in operating costs compared to the operating income, so it can be affected by a decline in profits that accrue to the bank. One of the acquired bank's operating income is the interest of the customer, while the operational cost is the cost of interest from third parties. The bank earned interest income would be much better if the cost of the interest are much smaller, but to get the cost of a small interest, the bank must be good at selecting a third party. In general, the parties

who provide funds at the bank have claimed to ask for a higher interest rate. The high interest rates that are desired by the third party caused the bank become more critical in terms of interest rates that are charged to customers. To get a great operating income, the bank should also be good at looking for, the customer and the bank can press a more minimal interest fee again. The results of this study are consistent with research conducted by Dumitic and Ridzac (2012) that shows the cost to income ratio that measures the efficiency of the bank had a negative correlation with net interest margin (NIM).

Non Performing Loan (NPL) as a Moderating Variable on the Influence of Capital Adequacy Ratio (CAR) to Net Interest Margin (NIM)

The test results against a NPL variable indicating that the NPL is moderating variable to relationship CAR with NIM, or it can be inferred that the NPL to moderate the influence of CAR against NIM conventional commercial Bank in Indonesia. During the research period the average value of Conventional commercial banks amounting to CAR 23.06% or above the minimum limit prescribed by Bank Indonesia. The high CAR shows the better capabilities of the bank to bear the risk of any credit/earning assets are risky, so the bank was able to finance its operational activities as well as provide a considerable contribution to profitability. On the other hand, the high CAR can reduce the ability of the bank in expanding its business. This will affect the interest income received by the bank or NIM will decline.

The results of this study in accordance with the theory that states that the higher the CAR, then the stronger ability of the bank to bear the risk of any credit/earning assets are at risk and be able to finance the operations of the bank, so that it will give a considerable contribution to the profitability of Kuncoro and Suhardjono (2002:573). This research supports the research of Negara and Sujana (2014) stating that NPL has a negative effect to the relationship of the CAR with profitability. But the difference is the proxy of profitability used in that study is ROA, while this research use the proxy NIM as profitability.

Non Performing Loan (NPL) as a Moderating Variable on the influence of the Loan to Deposit Ratio (LDR) to Net Interest Margin (NIM)

The test results against moderating variable NPL showed that the NPL is a moderating variable to relationship LDR with NIM, or it can be inferred that NPL is to moderate the influence of LDR against NIM conventional commercial Bank in Indonesia. Non performing loan factor that measured with the NPL ratio is certainly not going to be separated from the main activity of banks in the conduct of its business in the form of the distribution of credit, so that it can affect the margin of bank. Conventional commercial banks during the period 2012-2015 have average value ratio LDR of 98.19% which means that the distribution of the bank credit is high enough. However, the high degree of credit distribution if not right on target may pose risk of nonperforming loans is bigger, so it will affect the interest income received. The incidence of bad debts as a result of the credit channeling less effective will affect the magnitude of the net interest margin (NIM).

The results of this research are consistent with the results of research of Utami and Putra (2016) in the fact - NPL has a negative effect on the relationship of LDR and profitability (NIM). Utami and Putra (2016) explained that incidence of non performing loan will result in the loss of the bank, because the funds disbursed by the bank in the form of credit is not returned or interest income that cannot be accepted so that the profitability of the bank will be decreased. Besides the increase in NPL ratio will also have an effect on decreasing public confidence as well as the health of the bank.

Non Performing Loan (NPL) as a Moderating Variable on the Influence of Operating Expenses to Operating Income (BOPO) against Net Interest Margin (NIM)

The results of testing variables moderating the NPL have showed that the NPL is moderating variable of the relationship BOPO with NIM, or it can be inferred that the NPL moderated influence of the BOPO against NIM conventional commercial Bank in Indonesia. Bad debt, indicated by the NPL can be increased on the expenses effect from an increase in the expenses of backup earning assets or other expenses, so the increase in NPL can interfere with the performance of the bank. The average ratio of BOPO Conventional commercial banks during the research period is 83.37% or large enough, so that it can be said that the bank has not been efficient in suppressing its operational costs. This can be caused, because the bank is too cautious against risks that will occur, so the banks back up their funds for the loss of productive assets that will occur and lead to increased operating expenses, as well as the income that will be accepted will also decrease.

The results of this study are inconsistent with research Dewi and Budiasih (2016) stating that the NPL is not able to moderate the influence of BOPO on profitability. Dewi and Budiasih (2016) explains in his research that credit quality (NPL) is not moderating influence of BOPO on profitability and it can be caused by the existence of other internal or external factors that further influence BOPO such as third-party funds. Increased third-party funds will have an impact on increasing the interest expense that must be paid so that it will lead to an increase in the ratio of BOPO.

CONCLUSIONS

Based on the results of research and discussion about the influence of CAR, LDR and BOPO to profitability that is measured by NIM on Conventional Commercial Bank in period 2012-2015, as well as analyzing the NPL as moderating variables of relationship between CAR with NIM, LDR with NIM and BOPO with NIM of Conventional Commercial Bank in period 2012-2015, it can be drawn that partially CAR, LDR and BOPO are significant and has a negative relation with NIM. The results of residual analysis showed that the NPL is able to moderate the influence of CAR against NIM, the influence of LDR against NIM, and the influence of BOPO against NIM.

REFERENCES

1. Ariyanto, T. 2011. *Faktor Penentu Net Interest Margin Perbankan Indonesia*. *Finance and Banking Journal*. 13 (1): 34-46.
2. Cindy, A. M., Sumani, dan Nurhayati. 2016. *Determinan Net Interest Margin pada Bank Umum di Indonesia*. *Artikel Ilmiah Mahasiswa*. Universitas jember. 1-7.
3. Dewi, N. P. E. N., dan I. G. A. N. Budiasih. 2016. *Kualitas Kredit Sebagai Pemoderasi Pengaruh Tingkat Penyaluran Kredit Dan Bopo Pada Profitabilitas*. *E-Jurnal Akuntansi Universitas Udayana*. 15(1): 784-798.
4. Domicic, M., dan T. Ridzak. 2013. *Determinants of Banks' Net Interest Margins in Central and Eastern Europe*. *Financial Theory and Practice*. 37(1):1-30.
5. Ghozali, I. 2007. *Aplikasi Analisis Multivariate dengan Program SPSS*. Semarang: BPUNDIP.
6. Hidayat, T., Hamidah, dan U. Mardiyati. 2012. *Analisis Pengaruh Karakteristik Bank dan Inflasi Terhadap Net Interest Margin*. *Jurnal Riset Manajemen Sains Indonesia (JRMSI)*. 3 (1): 1-15.
7. Kuncoro, M., dan Suhardjono. 2002. *Manajemen Perbankan*. Yogyakarta: BPFE.

8. Leykun, F. 2016. *Factors Affecting the Net Interest Margin of Commercial Bank of Ethiopia*. *International Journal of Scientific and Research Publications*. 6 (6): 150-161.
9. Negara, I. P. A. A., dan I. K. Sujana. 2014. *Pengaruh Capital Adequacy Ratio, Penyaluran Kredit Dan Non Performing Loan Pada Profitabilitas*. *E-Jurnal Akuntansi Universitas Udayana*. 9(2): 325-339.
10. Raharjo, P. G. 2014. *Faktor Determinan Marjin Bunga Bersih Bank Pembangunan Daerah di Indonesia: Suatu Studi Data Panel*. *Jurnal Keuangan dan Perbankan*. 18 (1): 105-119.
11. Satriawan, R. D. 2015. *Pengaruh Dana Pihak Ketiga (Tabungan, Deposito Dan Giro) dan Kredit Yang Disalurkan terhadap Net Interest Margin (NIM) Pada Bank Jatim Jawa Timur*. *Jurnal JIBEKA*. 9 (1): 70-75.
12. Utami, I. A. T. I., dan I. N. W. A. Putra. 2016. *Non Performing Loan sebagai Pemoderasi Pengaruh Kredit Yang Disalurkan pada Profitabilitas*. *E-Jurnal Akuntansi Universitas Udayana*. 15(3): 2107-2133